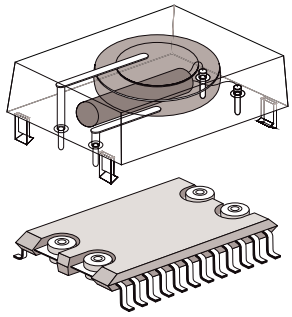
AN1019
APPLICATION NOTE

Second Source for “SNAPHAT” by Using a Dual Footprint

By integrating a battery and power switching circuitry in its ZEROPOWER memory devices, STMicroelectronics was the first to develop non-volatile CMOS Static RAM technology. This is conventional, high speed, low power, random access, read/write memory that retains its data even when the external power is removed. By further integrating a crystal oscillator a real time clock in the package for its TIMEKEEPER products, STMicroelectronics provides, in a single chip package, non-volatile SRAM and timekeeping that continues to run without external power.

STMicroelectronics has subsequently extended the technique to work with surface mount packaging, in a product range that is known as the SNAPHAT (as shown in Figure 1). The standard 28-pin or 44-pin SOIC allows the SNAPHAT (containing the battery and crystal) to be mounted on top of the SOIC package after completion of the surface mount process, thereby avoiding these components from being exposed to the high temperatures of the surface-mounting process.

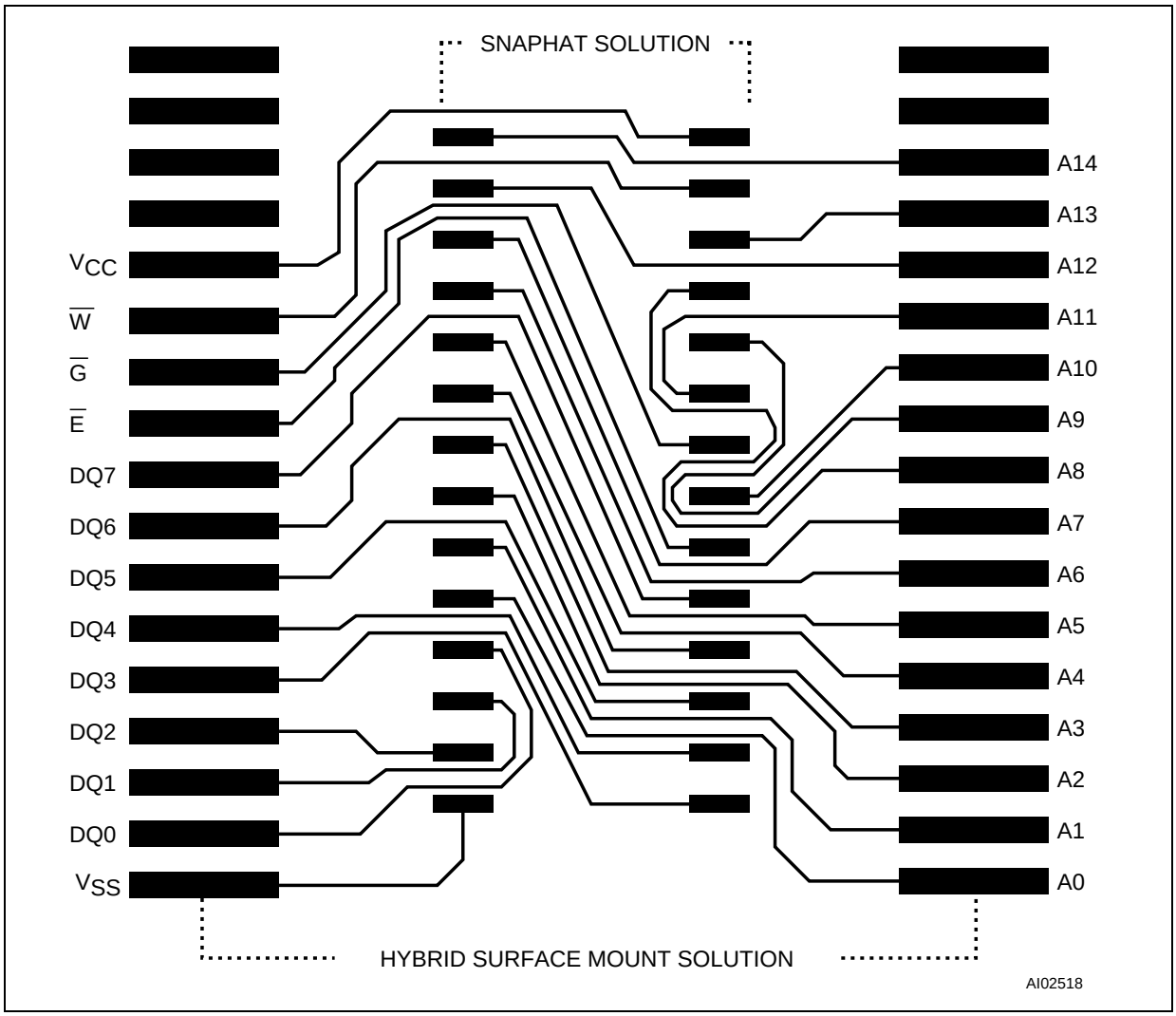
Figure 1. SOIC and SNAPHAT Package



STMicroelectronics is proud of this technology. The SNAPHAT assembly process is fully automated (as described in *AN928*), and consistently produces a highly reliable product in volume. This automated equipment takes advantage of microcomputer controlled robotics to obtain the reproducible accuracy required to pick, place, weld and encapsulate both battery and crystal in the SNAPHAT package.

However, although we are proud to be the industry’s sole source of this technology, we recognise that many customers will be unable to take advantage of it unless we can also provide a path to a second source. Thus, a recommended dual footprint has been designed, and is shown in Figure 2, on the next page. This suggested board layout uses a Dallas Semiconductor hybrid surface mount device in order to provide an alternative for the M48T58, M48T59 or M48T35. Traces have been laid out on a single level with a minimum width and space of 6 mils.

Figure 2. Dual Footprint for the Dallas Semiconductor Hybrid Device and the ST ZEROPOWER or TIMEKEEPER SNAPHAT Device



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Please remember to include your name, company, location, telephone number and fax number.

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